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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,283	09/14/2006	Masanori Wada	2006-0184A	3298

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EXAMINER	
ROJAS, OMAR R	
ART UNIT	**PAPER NUMBER**
2874	

MAIL DATE	DELIVERY MODE
08/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

TH

Office Action Summary	Application No.	Applicant(s)	
	10/568,283	WADA ET AL.	
	Examiner	Art Unit	
	Omar Rojas	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *June 21, 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Detailed Action*.

DETAILED ACTION

Response to Amendment

1. With regards to the amendment filed on June 21, 2007, all the requested changes to the claims and specification have been entered. Claims 1-20 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

3. The indicated allowability of claim 8 is withdrawn in view of the newly discovered reference(s) to Nakamura et al. Rejections based on the newly cited reference(s) follow.

Drawings

4. The drawings were received on June 21, 2007. These drawings are acceptable.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003-222764 to Morooka et al. ("Morooka") in view of Publication No. US 2002/0074086 A1 to Nakamura et al. ("Nakamura").

The Morooka document was submitted as part of Document "AJ" in the Information Disclosure Statement ("IDS") filed May 16, 2006. Document AJ further includes an English translation of the Morooka document and has been relied upon by the examiner.

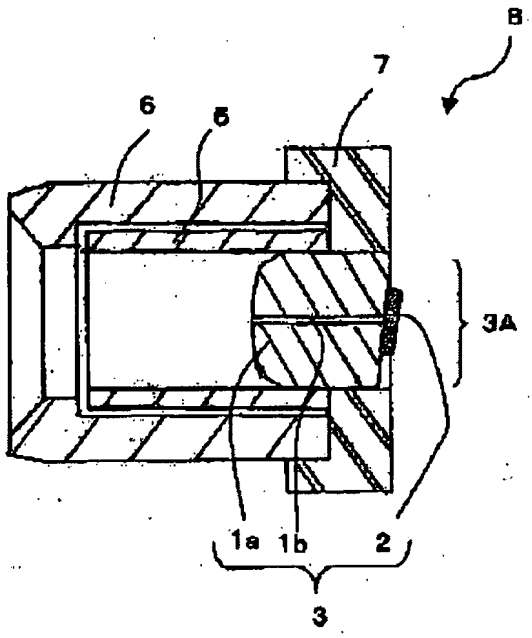
In re claim 1, Morooka discloses an optical receptacle (Figures 1-3) comprising:

a precision sleeve **5**;

a stub **3** provided with an optical fiber **1b**, said stub **3** being inserted into one end of an inner hole of the precision sleeve **5**;

a sleeve holder **6/7** fixed to an outer periphery of the precision sleeve **5** by press-fitting or through an adhesive (Document AJ: page 4, paragraph [0004] and page 7, [0043]);

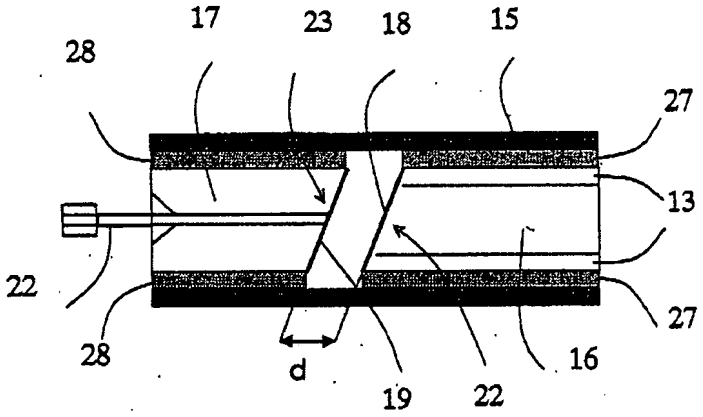
wherein an outer peripheral face of the stub **3** and the inner hole of the precision sleeve **5** have a surface roughness "Ra" value of 0.2 micrometers or less (Document AJ: page 7, paragraph [0036]). Figure 1 of Morooka is reproduced below.



In re claim 4, Morooka discloses a bore tolerance between the sleeve **5** and a ferrule **1a** of 1 micrometer or less (Document AJ: page 7, paragraph [0036]).

Thus, Morooka only differs from claims 1 and 4 in that Morooka does not disclose fixing the stub **3** to the sleeve **5** through an adhesive. Nakamura, however, teaches fixing an optical fiber ferrule **17** to a precision sleeve **15** through an adhesive **28**. *See* Nakamura at paragraph [082]. Figure 8 of Nakamura is reproduced below.

FIG. 8



One motivation for combining Nakamura with Morooka is mentioned in paragraph [033] of Nakamura (i.e., provide "excellent mechanical and physical strengths, environmental resistance, and heat resistance"). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 1 and 4 in view of Morooka combined with Nakamura.

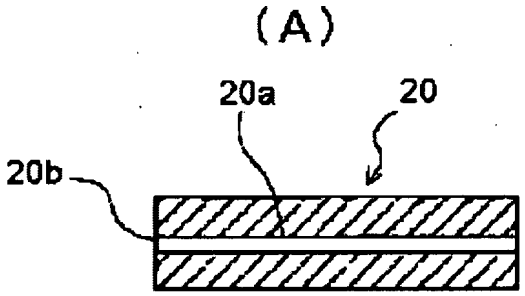
In re claim 8, Morooka further differs from the claim in that Morooka does not disclose an adhesive containing 10 vol% or more of fillers having a maximum particle size of 0.5 μm or less and an average particle size of 0.3 μm or less. Nakamura, however, teaches that his adhesive includes reinforcing agents (i.e., "fillers") in an amount of 40 wt % or less (i.e., 10 vol% or more) and having a particle diameter of 0.5 μm or less. *See* paragraph [038] of Nakamura. Note that an average particle size of 0.3 μm or less is considered inherently within the scope of Nakamura

because Nakumura specifically teaches an overlapping scope of 0.5 μm or less for the particle diameter. Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 8 in view of Morooka combined with Nakamura for the same reasons mentioned with respect to claims 1 and 4.

10. Claim 2, 3, 5-7, and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morooka combined with Nakamura as applied to claims 1 and 4 above, and further in view of JP 2003-149502 to Saito et al. ("Saito").

The Saito document was submitted as part of Document "AI" in the IDS filed May 16, 2006. Document AI further includes an English translation of the Saito document that has been relied upon by the examiner.

In re claims 2 and 10, Morooka combined with Nakamura only differ from the claims in that Morooka does not expressly teach that an outer periphery of his stub **3** or the inner hole of his precision sleeve **5** has a surface roughness Ra value of more than 0.2 μm and a surface roughness Ry value of 4.0 μm or less, and a difference between an average line and a peak line of surface roughness is 2.0 μm or less. Saito, however, teaches an inner hole **20a** of a capillary tube **20** having a surface roughness Ra, a surface roughness Ry, and a difference between an average line and a peak line of surface roughness that overlap the values recited by claim 2. *See* Document AI, page 10, paragraph [0040]. Figure 1 of Saito is reproduced below.



Although Saito is primarily concerned with the alignment between his capillary tube **20** and an optical fiber, the same general principle would have also applied to Morooka's precision sleeve **5** and ferrule **1a**. In other words, one of ordinary skill in the art would have easily recognized that Saito's technique for optimizing alignment between an optical fiber and a cylindrical tube would also be relevant to aligning Morooka's cylindrical ferrule **1a** with Morooka's cylindrical sleeve **5**. The motivation for combining Saito with Morooka would have been to lower optical connection losses. *See* page 1 of Document AI. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 2 and 10 in view of Morooka combined with Nakamura, and further in view of Saito.

In re claims 3 and 11, Morooka combined with Nakamura only differ from the claim in that Morooka does not expressly teach that his optical fiber **1b** has a concentricity of 0.5 μm or less with respect to the outer periphery of his stub **3**. Saito, however, teaches an optical fiber having a concentricity of 0.7 micrometers or less with respect to the outer periphery of a stub/capillary tube **20**. *See* page 10, paragraph [0040] of Document AI. The motivation for combining Saito with Morooka and Nakamura would have been to optimize the alignment between Morooka's optical fiber **1b** and stub **3**. Therefore, it would have been obvious to one of ordinary skill in the

art at the time of the claimed invention to obtain the invention specified by claims 3 and 11 in view of Morooka combined with Nakamura, and further in view of Saito.

In re claim 5, Morooka combined with Nakamura only differs from the claim in that Morooka does not expressly teach that his ferrule **1a** is formed of crystallized glass. Saito, however, teaches a ferrule **21** formed of crystallized glass. *See* page 10, paragraph [0042] of Document AI. The motivation for combining Saito with Morooka and Nakamura would have been to lower connection losses. *See* page 1 of Document AI. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 5 in view of Morooka combined with Nakamura, and further in view of Saito.

In re claim 6, Morooka combined with Nakamura only differs from the claim in that Morooka does not expressly teach that his precision sleeve **5** is formed of crystallized glass. Saito, however, teaches that using a capillary tube **20** made of crystallized glass saves manufacturing costs and reduces optical connection losses. *See* page 6, paragraph [0013] and page 10, paragraph [0042] of Document AI. The same benefits would also apply when using crystallized glass to form Morooka's sleeve **5** of. Additional motivation for combining Saito with Morooka and Nakamura would have been to optimize the alignment between Morooka's optical fiber **1b** and stub **3**. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 6 in view of Morooka combined with Nakamura, and further in view of Saito.

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/Omar Rojas/
Patent Examiner, Art Unit 2874

or
August 11, 2007

Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800

In re claim 7, Morooka combined with Nakamura further differs from the claim in that neither reference teaches crystallized glass having a crystal grain size and a crystal amount as specified by the claim. Saito, however, also teaches that his crystallized glass capillary tube **20** comprises the same crystal grain size and crystal amount specified by claim 7. *See* page 13, paragraph [0057] of Document AI. Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 7 in view of Morooka combined with Nakamura and Saito using the same rationale mentioned with respect to claim 5.

In re claims 9 and 12-20, the limitations specified by these claims are also considered obvious under 35 U.S.C. § 103 for analogous reasons to those mentioned with respect to claims 2, 3, 5-7, 10, and 11.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (9:00PM-5:00PM).
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications